

Name _____

Heating and Cooling Rates of Land vs Water

Table 1: Summer Temperatures near Portland, Maine

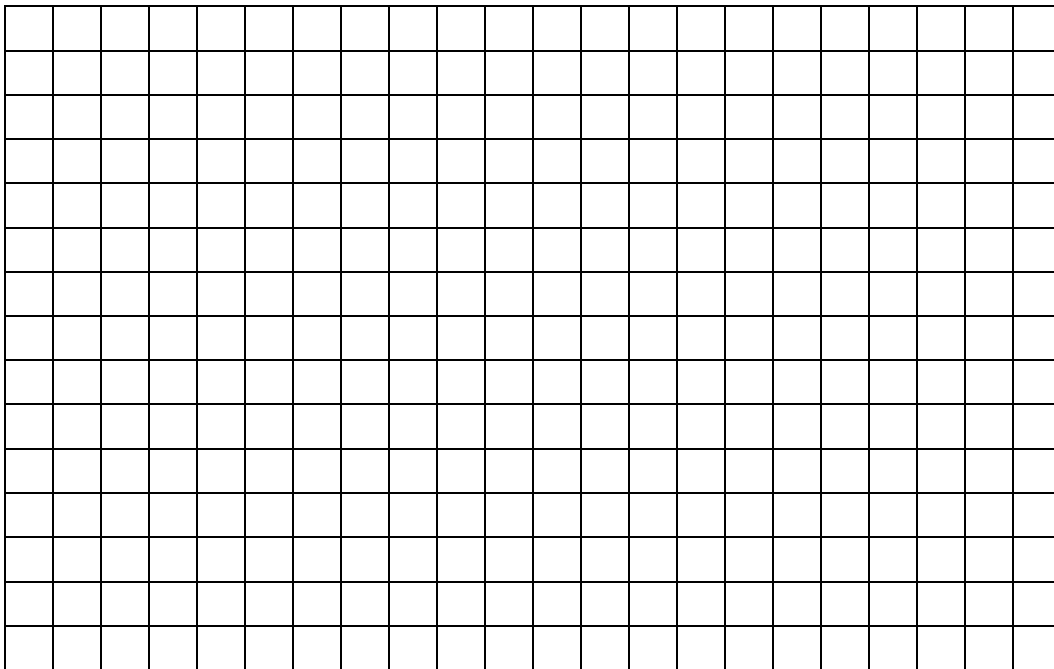
Time	Portland Parklands Temp (°C)	Atlantic Ocean Temp (°C)
6:00 am	14	18
8:00 am	17	19
10:00 am	18	19
12:00 pm (noon)	23	19
2:00 pm	26.5	19
4:00 pm	27	20
6:00 pm	27	20
8:00 pm	20	20
10:00 pm	18	20
12:00 am (midnight)	16	20
2:00 am	15	20
4:00 am	14	19

Answer the following questions using the table above:

1. What is the temperature of the Atlantic Ocean at 4:00pm? _____
2. What is the temperature of Portland Parklands at noon? _____
3. At what time of day is the temperature of the land at Portland Parklands and the water in the Atlantic Ocean the same? _____
4. At 2:00pm, what is the difference in temperature between the land and the water? _____ Which is warmer? _____
5. What do you think is the reason for this difference?

Using the grid below, create a graph of the data in Table 1. You must include the following:

- Give your graph a title
- Label the axes (include appropriate units)
- Number your axes with an appropriate scale that is evenly spaced
- Correctly plot the points and connect them to form 2 line graphs
- Create a key to distinguish between the land and water temperatures



KEY



LAND



WATER

Use the table and graph to answer the following questions:

1. Which heats faster, the land or the water? _____
2. Which cools faster, the land or the water? _____
3. Which holds heat longer, the land or the water? _____

Application

4. Explain why concrete feels hot under your feet in summer while water in the pool feels cold.